

Amendments to the Claims:

1-22. (canceled)

23. (currently amended) A process for covalently binding a tagged protein to a polymer particle, the process comprising:
providing a tagged protein;
contacting the tagged protein with a conjugate of a chelating agent and [[a]] the polymer particle to form a protein-polymer particle-chelating agent metal ion complex, wherein the chelating agent is covalently linked to the polymer particle; and
contacting the complex with a carbodiimide to form a covalently bound protein; wherein:
the tag comprises at least two histidine residues;
the tag comprises at least two lysine residues;
the chelating agent is tridentate, tetradebate, or pentadentate;
the chelating agent comprises at least two carboxyl groups; and
the chelating agent is coordinated by a metal ion.

24. (previously presented) The process of claim 23, further comprising removing the metal ion from the covalently bound protein,

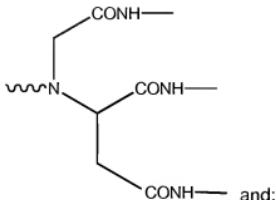
25. (previously presented) The process of claim 23, wherein the tagged protein is a HAT-tagged protein.

26. (previously presented) The process of claim 23, wherein the carbodiimide is dicyclohexylcarbodiimide, N-(3-dimethylaminopropyl)-N'-ethylcarbodiimide (EDC), or a salt thereof.

27. (previously presented) The process of claim 23, wherein the chelating agent comprises three carboxyl groups.

28. (previously presented) The process of claim 23, wherein the chelating agent is tetradebate.

29. (previously presented) The process of claim 23, wherein the chelating agent is iminodiacetic acid, nitrilo triacetic acid, tris(carboxymethyl)ethylene diamine or carboxymethylated aspartate (Cm-Asp).
30. (previously presented) The process of claim 23, wherein the polymer particle is magnetic.
31. (previously presented) The process of claim 23, wherein the polymer particle is porous.
32. (previously presented) The process of claim 23, wherein the polymer particle has a diameter of about 0.2 microns to about 1.5 microns.
33. (previously presented) The process of claim 23, wherein the metal ion is a transition metal ion.
34. (previously presented) The process of claim 23, wherein the metal ion has a 2+ oxidation state.
- [[34]]35. (currently amended) The process of claim[[.]] 23, wherein the metal ion is Co²⁺.
- [[35]]36. (currently amended) A covalently bound protein obtained by the process of claim 23.
- [[36]]37. (currently amended) A protein bound to a polymer particle having the structure:
Polymer particle - linker - protein; wherein:
the linker comprises the structure:



the protein comprises a tag sequence comprising at least two histidine residues and at least two lysine residues, wherein the linker further comprises a structure:

-NH-L₁-Er-Nr-L₂-

wherein L₁ is a linker comprising 1 to 10 atoms, L₂ is a linker comprising 1 to 10 atoms, E is an electrophile residue, and N is a nucleophile residue.

[[37]]38. (currently amended) A protein covalently bound to a magnetic polymer particle, wherein:

the protein comprises a tag sequence;
the tag sequence comprises at least two histidine residues and at least two lysine residues; the magnetic polymer particle comprises a linking group; and
the linking group is covalently bound to at least one of the at least two lysine residues via amide linkages, wherein the linking group comprises at least three linking atoms.

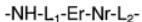
[[38]]39. (currently amended) A plurality of proteins particles of claim [[37]]38, wherein the plurality of particles proteins are monodisperse.

40. (new) The protein of claim 38, wherein the linking group comprises an amino group.

41. (new) The protein of claim 38, wherein the linking group comprises an electrophile residue.

42. (new) The protein of claim 38, wherein the linking group comprises a nucleophile residue.

43. (new) The protein of claim 38, wherein the linking group has the structure:



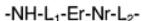
wherein L₁ is a linker comprising 1 to 10 atoms, L₂ is a linker comprising 1 to 10 atoms, E_r is an electrophile residue, and N_r is a nucleophile residue.

44. (new) The process of claim 1, wherein the chelating agent is covalently linked to the polymer particle by at least three linking atoms.

45. (new) The process of claim 1, wherein the chelating agent is covalently linked to the polymer particle by at least six linking atoms.

46. (new) The process of claim 1, wherein the chelating agent is covalently linked to the polymer particle by 6 to 20 linking atoms.

47. (new) The process of claim 1, wherein the chelating agent is covalently linked to the polymer particle by linking group having the structure:



wherein L₁ is a linker comprising 1 to 10 atoms, L₂ is a linker comprising 1 to 10 atoms, E_r is an electrophile residue, and N_r is a nucleophile residue.